

IN THE CLAIMS

Please cancel claim 1-3 and 6-22 without prejudice to its prosecution in subsequent continuation or divisional applications. Please amend the claims as follows:

Claims 1-3 (cancelled)

4. (Currently amended) ~~The electron device which controls quantum chaos according to claim 1, wherein the first region is in a metallic state, and a random magnetic field is present in the second region~~ An electron device which controls quantum chaos comprising a heterojunction which is provided with:

_____ a first region having an electron system characterized by quantum chaos with the first region in a metallic state, and

_____ a second region having an electron system characterized by integrability and having a random magnetic field,

_____ wherein,

_____ the first region and the second region are adjacent to each other,

_____ the heterojunction is capable of exchanging electrons between the first region and the second region, and

_____ a quantum chaos property of the electron device is controllable by applying to the heterojunction an electric field having a component perpendicular to at least a junction surface and an electrode for applying the electric field to the heterojunction.

5. (Currently amended) The electron device which controls quantum chaos according to claim 4, wherein

~~a magnetic impurity is added to the second region~~ includes a magnetic impurity.

Claims 6-22 (Cancelled)